

SECTION XVI

MACHINERY AND MECHANICAL APPLIANCES;  
ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND  
RECORDERS AND REPRODUCERS, TELEVISION IMAGE  
AND SOUND RECORDERS AND REPRODUCERS, AND PARTS  
AND ACCESSORIES OF SUCH ARTICLES

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Notes

1. This section does not cover:
  - (a) Transmission, conveyor or elevator belts or belting, of plastics of chapter 39, or of vulcanized rubber (heading 4010); or other articles of a kind used in machinery or mechanical or electrical appliances or for other technical uses, of vulcanized rubber other than hard rubber (heading 4016);
  - (b) Articles of leather or of composition leather (heading 4204) or of furskin (heading 4303), of a kind used in machinery or mechanical appliances or for other technical uses;
  - (c) Bobbins, spools, cops, cones, cores, reels or similar supports, of any material (for example, chapter 39, 40, 44 or 48 or section XV);
  - (d) Perforated cards for Jacquard or similar machines (for example, chapter 39 or 48 or section XV);
  - (e) Transmission or conveyor belts of textile material (heading 5910) or other articles of textile material for technical uses (heading 5911);
  - (f) Precious or semiprecious stones (natural, synthetic or reconstructed) of headings 7102 to 7104, or articles wholly of such stones of heading 7116, except unmounted worked sapphires and diamonds for styli (heading 8522);
  - (g) Parts of general use, as defined in note 2 to section XV, of base metal (section XV), or similar goods of plastics (chapter 39);
  - (h) Drill pipe (heading 7304);
  - (i) Endless belts of metal wire or strip (section XV);
  - (k) Articles of chapter 82 or 83;
  - (l) Articles of section XVII;
  - (m) Articles of chapter 90;
  - (n) Clocks, watches or other articles of chapter 91;
  - (o) Interchangeable tools of heading 8207 or brushes of a kind used as parts of machines of heading 9603; similar interchangeable tools are to be classified according to the constituent material of their working part (for example, in chapter 40, 42, 43, 45 or 59 or heading 6804 or 6909); or
  - (p) Articles of chapter 95.
2. Subject to note 1 to this section, note 1 to chapter 84 and to note 1 to chapter 85, parts of machines (not being parts of the articles of heading 8484, 8544, 8545, 8546 or 8547) are to be classified according to the following rules:
  - (a) Parts which are goods included in any of the headings of chapters 84 and 85 (other than headings 8485 and 8548) are in all cases to be classified in their respective headings;
  - (b) Other parts, if suitable for use solely or principally with a particular kind of machine, or with a number of machines of the same heading (including a machine of heading 8479 or 8543) are to be classified with the machines of that kind. However, parts which are equally suitable for use principally with the goods of headings 8517 and 8525 to 8528 are to be classified in heading 8517;
  - (c) All other parts are to be classified in heading 8485 or 8548.
3. Unless the context otherwise requires, composite machines consisting of two or more machines fitted together to form a whole and other machines adapted for the purpose of performing two or more complementary or alternative functions are to be classified as if consisting only of that component or as being that machine which performs the principal function.
4. Where a machine (including a combination of machines) consists of individual components (whether separate or interconnected by piping, by transmission devices, by electric cables or by other devices) intended to contribute together to a clearly defined function covered by one of the headings in chapter 84 or chapter 85, then the whole falls to be classified in the heading appropriate to that function.
5. For the purposes of these notes, the expression "machine" means any machine, machinery, plant, equipment, apparatus or appliance cited in the headings of chapter 84 or 85.

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Statistical Note

1. Provisions for semiconductor manufacturing and testing machines and apparatus cover products for the growth and processing of semiconductor materials, such as silicon and gallium arsenide, the processing of such materials into semiconductor devices and the testing of such devices (in general the testing equipment, as well as some of the processing equipment, is classified in chapter 90). More specifically the goods include the following:
  - (a) Wafer manufacturing equipment:
    - (i) Crystal growers & pullers. - used to produce extremely pure monocrystalline semiconductor boules from which wafers can be sliced. Most common methods employed in these crystal growers and pullers are the Czochralski and float zone methods.
    - (ii) Wafer preparation equipment:
      - (A) Crystal grinders - used to grind the crystal boule to precise diameter required for wafers and to grind the flats on the boule to indicate the conductivity type and resistivity of the crystal.
      - (B) Wafer slicing saws - used to slice wafers from a boule of monocrystalline semiconductor material.
      - (C) Wafer grinders, lappers and polishers - used to prepare the semiconductor wafer for the fabrication process. This involves bringing the wafer within dimensional tolerances. Especially critical is the flatness of its surface.
  - (b) Mask fabrication and repair equipment -
    - (i) Fabrication equipment - used to transfer design patterns to a mask or reticle, this equipment generally utilizes optical, electron beam or X-rays to write circuit patterns on photoresist coated substrates. After development, these substrates become the mask or reticle for wafer fabrication.
    - (ii) Repair equipment - this equipment generally utilizes focused ion beams or laser beams. They are used directly on the mask or reticle to remove chrome.
  - (c) Wafer fabrication equipment:
    - (i) Film formation equipment - used to apply or produce various films on the surface of the wafer during the fabrication process. These films serve as conductors, insulators and semiconductors on the finished device. They may include oxides and nitrides of the substrate surface, metals, and epitaxial layers. The processes and equipments listed below are not necessarily limited to the generation of a particular type of film.
      - (A) Oxidation furnaces - used to form a "film" of oxide on the wafer. The oxide is formed by the chemical reaction of the top molecular layers of the wafer with the applied oxygen or steam under heat.
      - (B) Chemical Vapor Deposition (CVD) equipment - used to deposit various types of films which are obtained by combining the appropriate gases in a reactant chamber at elevated temperatures. This constitutes a thermochemical vapor-phase reaction. Operations may take place at atmospheric or low pressure (LPCVD) and may use plasma enhancement (PECVD).
      - (C) Physical Vapor Deposition (PVD) equipment - used to deposit various types of films which are obtained by vaporizing a solid.
        - (1) Evaporation equipment - in which the film is generated by heating the source material.
        - (2) Sputtering equipment - in which the film is generated by bombarding the source material (target) with ions.
      - (D) Molecular Beam Epitaxy (MBE) equipment - used to grow epitaxial layers on a heated monocrystalline substrate in an ultrahigh vacuum using beams of molecules. The process is similar to PVD."
    - (ii) Doping equipment - which is used to introduce dopants into the wafer surface in order to modify the conductivity or other characteristics of a semiconductor layer:
      - (A) Thermal diffusion equipment - in which the dopants introduced into the surface of the wafer by the application of gases under high temperatures.
      - (B) Ion Implantation - in which the dopants are "driven" into the crystal lattice structure of the surface of the wafer in the form a beam of accelerated ions.
      - (C) Annealing furnaces - which are used to repair the crystal lattice structures of the wafer damaged by ion implantation.
    - (iii) Etching and stripping equipment - used for etching or cleaning surfaces of the wafers.
      - (A) Wet etching equipment - in which chemical etching materials are applied by spraying or immersion. Spray etchers provide more uniform results than bath etchers, since they perform the operation on one wafer at a time.
      - (B) Dry plasma etching - in which etching materials are presented as gases within a plasma energy field, providing an anisotropic etch profile.

- (C) Ion beam milling equipment - in which ionized gas atoms are accelerated toward the wafer surface. The impact results in the top layer being physically removed from the surface.
- (D) Strippers or ashers - using techniques similar to etching this apparatus removes the spent photoresist from the surface of the wafer after it has served its purpose as a "stencil". This equipment is also used for removal of nitrides, oxides, and polysilicon, with an isotropic etch profile.
- (iv) Lithography equipment - used to transfer the circuit designs to the photoresist coated surface of the semiconductor wafer.
  - (A) Equipment for coating wafers with photoresist - these include the photoresist spinners which are used to apply liquid photoresist evenly over the surface of the wafer.
  - (B) Equipment for exposing the photoresist coated wafer with the circuit design (or a part thereof):
    - (1) Using a mask or reticle and exposing the photoresist to light (generally ultraviolet) or, in some instances, X-rays:
      - (a) Contact printers - where the mask or reticle is in contact with the wafer during exposure.
      - (b) Proximity aligners - similar to contact aligners except actual contact doesn't take place between the mask or reticle and the wafer.
      - (c) Scanning aligners - which use projection techniques to expose a continuously moving slit across the mask and wafer.
      - (d) Step and repeat aligners - which use projection techniques to expose the wafer a portion at a time. Exposure can be by reduction from the mask to the wafer or 1:1. Enhancements include the use of an excimer laser.
    - (2) Direct write on wafer equipment - these apparatus operate with no mask or reticle. They use a computer controlled "writing beam" (such as, an electron beam (E-beam), ion beam or laser) to "draw" the circuit design directly on the photoresist coated wafer.
  - (C) Equipment for developing exposed wafers - these include chemical baths similar to those used in photographic laboratory applications
- (d) Assembly equipment
  - (i) Dicing equipment - these include sawing machines and scribing machines (including laser scribes) and dicing accessories such as wafer breaking equipment.
  - (ii) Die bonding equipment - which installs the die to the package by soldering or gluing
  - (iii) Wire bonding equipment - used for attaching thin wires or tapes (usually of gold, aluminum or copper) from the die bonding pads to the corresponding pads on the package.
  - (iv) Packaging equipment - which are used to encapsulate or package a semiconductor device. They include sealing furnaces, lid welders, plastic encapsulation presses, lead trim and form equipment, package deflashers, and tin dip and solder plate equipment.
- (e) Testing and inspection equipment
  - (i) Optical inspection equipment - These include equipment that "examines" portions of the wafer surface and compares them either to a standard pattern or to other portions of the wafer surface.
  - (ii) Electrical testing equipment - These include computer controlled systems that test the functions and electrical specifications of semiconductor devices through the application and detection of electrical signals or patterns. Testing is performed on both unencapsulated dice and packaged integrated circuits.

CHAPTER 84

NUCLEAR REACTORS, BOILERS, MACHINERY AND  
MECHANICAL APPLIANCES; PARTS THEREOF

XVI  
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Notes

1. This chapter does not cover:
  - (a) Millstones, grindstones or other articles of chapter 68;
  - (b) Appliances or machinery (for example, pumps) or parts thereof, of ceramic material (chapter 69);
  - (c) Laboratory glassware (heading 7017); machinery, appliances or other articles for technical uses or parts thereof, of glass (heading 7019 or 7020);
  - (d) Articles of heading 7321 or 7322 or similar articles of other base metals (chapters 74 to 76 or 78 to 81);
  - (e) Electromechanical tools for working in the hand, of heading 8508, or electromechanical domestic appliances of heading 8509; or
  - (f) Hand-operated mechanical floor sweepers, not motorized (heading 9603).
2. Subject to the operation of note 3 to section XVI, a machine or appliance which answers to a description in one or more of the headings 8401 to 8424 and at the same time to a description in one or more of the headings 8425 to 8480 is to be classified under the appropriate heading of the former group and not the latter.

Heading 8419 does not, however, cover:

  - (a) Germination plant, incubators or brooders (heading 8436);
  - (b) Grain-dampening machines (heading 8437);
  - (c) Diffusing apparatus for sugar juice extraction (heading 8438);
  - (d) Machinery for the heat treatment of textile yarns, fabrics or made up textile articles (heading 8451); or
  - (e) Machinery or plant, designed for mechanical operation, in which a change of temperature, even if necessary, is subsidiary.

Heading 8422 does not cover:

  - (a) Sewing machines for closing bags or similar containers (heading 8452); or
  - (b) Office machinery of heading 8472.
3. A machine tool for working any material which answers to a description in heading 8456 and at the same time to a description in heading 8457, 8458, 8459, 8460, 8461, 8464 or 8465 is to be classified in heading 8456.
4. Heading 8457 applies only to machine tools for working metal (other than lathes) which can carry out different types of machining operations either:
  - (a) By automatic tool change from a magazine or the like in conformity with a machining program (machining centers);
  - (b) By the automatic use, simultaneously or sequentially, of different unit heads working on a fixed-position workpiece (unit construction machines, single station); or
  - (c) By the automatic transfer of the workpiece to different unit heads (multistation transfer machines).

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5. (A) For purposes of heading 8471, the expression "automatic data processing machines" means:
  - (a) Digital machines, capable of (1) storing the processing program or programs and at least the data immediately necessary for execution of the program; (2) being freely programmed in accordance with the requirements of the user; (3) performing arithmetical computations specified by the user; and, (4) executing, without human intervention, a processing program which requires them to modify their execution, by logical decision during the processing run;
  - (b) Analog machines capable of simulating mathematical models and comprising at least: analog elements, control elements and programming elements;
  - (c) Hybrid machines consisting of either a digital machine with analog elements or an analog machine with digital elements.
- (B) Automatic data processing machines may be in the form of systems consisting of a variable number of separately housed units. A unit is to be regarded as being a part of the complete system if it meets all of the following conditions:
  - (a) It is connectable to the central processing unit either directly or through one or more other units; and
  - (b) It is specifically designed as part of such a system (it must, in particular, unless it is a power supply unit, be able to accept or deliver data in a form (code or signals) which can be used by the system).

Such units entered separately are also to be classified in heading 8471.

Heading 8471 does not cover machines incorporating or working in conjunction with an automatic data processing machine and performing a specific function. Such machines are classified in the headings appropriate to their respective functions or, failing that, in residual headings.

6. Heading 8482 applies, inter alia, to polished steel balls, the maximum and minimum diameters of which do not differ from the nominal diameter by more than 1 percent or by more than 0.05 mm, whichever is less. Other steel balls are to be classified under heading 7326.
7. A machine which is used for more than one purpose is, for the purposes of classification, to be treated as if its principal purpose were its sole purpose.

Subject to note 2 to this chapter and note 3 to section XVI, a machine the principal purpose of which is not described in any heading or for which no one purpose is the principal purpose is, unless the context otherwise requires, to be classified in heading 8479. Heading 8479 also covers machines for making rope or cable (for example, stranding, twisting or cabling machines) from metal wire, textile yarn or any other material or from a combination of such materials.

#### Subheading Note

1. Subheading 8482.40 applies only to bearings with cylindrical rollers of a uniform diameter not exceeding 5 mm and having a length which is at least three times the diameter. The ends of the rollers may be rounded.

#### Additional U.S. Note

1. For the purposes of subheadings 8479.89.10, 8479.89.60, 8479.89.90, 8479.90.40 and 8479.90.80, the rate of duty "Free (C)" appearing in the column entitled "1-Special" applies only to the following articles and their parts: nonelectric starter motors; propeller regulators, nonelectric; servo-mechanisms, nonelectric; windshield wipers, nonelectric; hydropneumatic accumulators; pneumatic starters for turbojets, turbopropellers, or other gas turbines; toilet units specially designed for aircraft; mechanical actuators for thrust reversers; air humidifiers and dehumidifiers.

8401		Nuclear reactors; fuel elements (cartridges), non-irradiated, for nuclear reactors; machinery and apparatus for isotopic separation; parts thereof:				
8401.10.00	00	Nuclear reactors.....	t.....	6.5%	Free	(A,CA,E,IL,J) 45%
8401.20.00	00	Machinery and apparatus for isotopic separation, and parts thereof.....	t.....	3.9%	Free	(A,CA,E,IL,J) 35%
8401.30.00	00	Fuel elements (cartridges), non-irradiated, and parts thereof.....	X.....	6.5%	Free	(A,CA,E,IL,J) 45%
8401.40.00	00	Parts of nuclear reactors.....	t.....	6.5%	Free	(A,CA,E,IL,J) 45%
8402		Steam or other vapor generating boilers (other than central heating hot water boilers capable also of producing low pressure steam); super-heated water boilers; parts thereof:				
		Steam or other vapor generating boilers:				
8402.11.00	00	Watertube boilers with a steam production exceeding 45 t per hour.....	t.....	6.5%	Free	(A,CA,E,IL,J) 45%
8402.12.00	00	Watertube boilers with a steam production not exceeding 45 t per hour...	t.....	6.5%	Free	(A,CA,E,IL,J) 45%
8402.19.00	00	Other vapor generating boilers, including hybrid boilers.....	t.....	6.5%	Free	(A,CA,E,IL,J) 45%
8402.20.00	00	Super-heated water boilers.....	t.....	6.5%	Free	(A*,CA,E,IL, 45% J)
8402.90.00		Parts.....		6.5%	Free	(A,CA,E,IL,J) 45%
	10	Heat exchangers.....	t			
	90	Other.....	X			
8403		Central heating boilers (other than those of heading 8402) and parts thereof:				
8403.10.00	00	Boilers.....	No.....	4.2%	Free	(A,CA,E,IL,J) 45%
8403.90.00	00	Parts.....	X.....	4.2%	Free	(A,CA,E,IL,J) 45%
8404		Auxiliary plant for use with boilers of heading 8402 or 8403 (for example, economizers, super-heaters, soot removers, gas recoverers); condensers for steam or other vapor power units; parts thereof:				
8404.10.00		Auxiliary plant for use with boilers of heading 8402 or 8403.....		7%	Free	(A,CA,E,IL,J) 45%
	10	Economizers.....	t			
	50	Other.....	t			
8404.20.00	00	Condensers for steam or other vapor power units.....	t.....	7%	Free	(A,CA,E,IL,J) 45%
8404.90.00	00	Parts.....	X.....	7%	Free	(A,CA,E,IL,J) 45%
8405		Producer gas or water gas generators, with or without their purifiers; acetylene gas generators and similar water process gas generators, with or without their purifiers; parts thereof:				
8405.10.00	00	Producer gas or water gas generators, with or without their purifiers; acetylene gas generators and similar water process gas generators, with or without their purifiers.....	X.....	2.8%	Free	(A,CA,E,IL,J) 45%
8405.90.00	00	Parts.....	X.....	2.8%	Free	(A,CA,E,IL,J) 45%

8406		Steam turbines and other vapor turbines, and parts thereof:					
		Turbines:					
8406.11		For marine propulsion:					
8406.11.10	00	Steam turbines.....	No.....	7.5%	Free (A,CA,E,IL,J)	20%	
8406.11.90	00	Other.....	No.....	4.5%	Free (A,CA,E,IL,J)	27.5%	
8406.19		Other:					
8406.19.10		Steam turbines.....		7.5%	Free (A,CA,E,IL,J)	20%	
		Stationary steam turbines, condensing type:					
	10	Not exceeding 7,460 kW....	No.				
	20	Exceeding 7,460 kW.....	No.				
		Other:					
	50	Not exceeding 7,460 kW....	No.				
	70	Exceeding 7,460 kW.....	No.				
8406.19.90	00	Other.....	X.....	4.5%	Free (A,CA,E,IL,J)	27.5%	
8406.90		Parts:					
8406.90.10		Of steam turbines.....		7.5%	Free (A,CA,E,IL,J)	20%	
	40	Rotors or spindles and rotor or spindle assemblies.....	No.				
	80	Other.....	X				
8406.90.90	00	Other.....	X.....	4.5%	Free (A,CA,E,IL,J)	27.5%	
8407		Spark-ignition reciprocating or rotary internal combustion piston engines:					
8407.10.00		Aircraft engines.....		Free		35%	
		For use in civil aircraft:					
		New:					
	20	Less than 373 kW.....	No.				
	40	373 kW or over.....	No.				
	60	Used or rebuilt.....	No.				
	90	Other.....	No.				
		Marine propulsion engines:					
8407.21.00		Outboard motors.....		Free		35%	
	40	Less than 22.38 kW.....	No.				
	80	Other.....	No.				
8407.29.00		Other.....		Free		35%	
	10	Inboard engines with outboard drive.....	No.				
		Inboard engines with inboard drive:					
	20	Less than 746 W.....	No.				
	30	746 W or greater, but not exceeding 18.65 kW.....	No.				
	40	Exceeding 18.65 kW.....	No.				
		Reciprocating piston engines of a kind used for the propulsion of vehicles of chapter 87:					
8407.31.00		Of a cylinder capacity not exceeding 50 cc.....		Free		35%	
	40	Less than 746 W.....	No.				
	80	Other.....	No.				
8407.32		Of a cylinder capacity exceeding 50 cc but not exceeding 250 cc:					
8407.32.10	00	To be installed in tractors suitable for agricultural use.....	No.....	Free		Free	
8407.32.20		To be installed in vehicles of subheading 8701.20, or heading 8702, 8703 or 8704.....		3.1% <u>1/</u>	Free (A,B,E,IL,J)	35%	
	40	Used or rebuilt.....	No.		1.5% (CA) <u>2/</u>		
	80	Other.....	No.				
8407.32.90		Other.....		Free		35%	
	40	Not exceeding 18.65 kW.....	No.				
	80	Exceeding 18.65 kW.....	No.				

1/ See heading 9902.84.07.  
2/ See subheading 9905.00.00.

8407 (con.)	Spark-ignition reciprocating or rotary internal combustion piston engines (con.): Reciprocating piston engines of a kind used for the propulsion of vehicles of chapter 87 (con.):				
8407.33	Of a cylinder capacity exceeding 250 cc but not exceeding 1,000 cc:				
8407.33.10	To be installed in tractors suit- able for agricultural use.....				Free
30	Not exceeding 37.3 kW.....				No.
60	Exceeding 37.3 kW:				
90	Air-cooled.....				No.
8407.33.20	Other.....				No.
	To be installed in vehicles of sub- heading 8701.20, or heading 8702, 8703 or 8704.....				3.1% <u>1/</u> Free (A,B,E,IL,J) 35% 1.5% (CA) <u>2/</u>
40	Used or rebuilt.....				No.
80	Other.....				No.
8407.33.90	Other.....				Free
40	Not exceeding 18.65 kW.....				No.
80	Exceeding 18.65 kW.....				No.
8407.34	Of a cylinder capacity exceeding 1,000 cc:				
8407.34.10	To be installed in tractors suit- able for agricultural use.....				Free
30	Not exceeding 37.3 kW.....				No.
60	Exceeding 37.3 kW:				
90	Air-cooled.....				No.
8407.34.20	Other.....				No.
	To be installed in vehicles of sub- heading 8701.20, or heading 8702, 8703 or 8704.....				3.1% Free (A*,B,E,IL,J) 35% 1.5% (CA) <u>2/</u>
40	Used or rebuilt.....				No.
80	Other.....				No.
8407.34.90	Other.....				Free
8407.90	Other engines:				
8407.90.10	To be installed in agricultural or horticultural machinery or equipment.....				Free
10	Not exceeding 37.3 kW:				
20	Less than 4,476 W.....				No.
	Other.....				No.
60	Other:				
80	Air-cooled.....				No.
8407.90.90	Other.....				No.
10	Gas (natural or LP) engines.....				No.
	Other:				
20	Less than 746 W.....				No.
40	746 W or greater but less than 4,476 W.....				No.
60	4,476 W or greater but not exceeding 18.65 kW.....				No.
80	Exceeding 18.65 kW.....				No.

1/ See heading 9902.84.07.2/ See subheading 9905.00.00.



8408		Compression-ignition internal combustion piston engines (diesel or semi-diesel engines):			
8408.10.00		Marine propulsion engines.....	3.7%	Free	(A,CA,E,IL,J) 35%
	05	Not exceeding 111.9 kW.....	No.		
	15	Exceeding 111.9 kW but not exceeding 149.2 kW.....	No.		
	20	Exceeding 149.2 kW but not exceeding 223.8 kW.....	No.		
	30	Exceeding 223.8 kW but not exceeding 373 kW.....	No.		
	40	Exceeding 373 kW but not exceeding 746 kW.....	No.		
	50	Exceeding 746 kW.....	No.		
8408.20		Engines of a kind used for the propulsion of vehicles of chapter 87:			
8408.20.10		To be installed in tractors suitable for agricultural use.....	Free		Free
	40	Not exceeding 37.3 kW.....	No.		
	80	Exceeding 37.3 kW.....	No.		
8408.20.20	00	To be installed in vehicles of subheading 8701.20, or heading 8702, 8703 or 8704.....	No..... 3.7%	Free	(A*,B,CA,E,IL,J) 35%
8408.20.90	00	Other.....	No..... 3.7%	Free	(A*,CA,E,IL,J) 35%
8408.90		Other engines:			
8408.90.10		To be installed in agricultural or horticultural machinery or equipment.....	Free		Free
	40	Not exceeding 37.3 kW.....	No.		
	80	Exceeding 37.3 kW.....	No.		
8408.90.90		Other.....	3.7%	Free	(A,B,C,CA,E,IL,J) 35%
	10	Not exceeding 149.2 kW.....	No.		
	20	Exceeding 149.2 kW but not exceeding 373 kW.....	No.		
	30	Exceeding 373 kW but not exceeding 746 kW.....	No.		
	40	Exceeding 746 kW but not exceeding 1,119 kW.....	No.		
	50	Exceeding 1,119 kW.....	No.		

8409		Parts suitable for use solely or principally with the engines of heading 8407 or 8408:				
8409.10.00		For aircraft engines.....	Free			35%
	40	For use in civil aircraft.....	kg			
	80	Other.....	kg			
8409.91		Other:				
		Suitable for use solely or principally with spark-ignition internal combustion piston engines (including rotary engines):				
8409.91.10		Cast-iron parts, not advanced beyond cleaning, and machined only for the removal of fins, gates, sprues and risers or to permit location in finishing machinery.....	Free			10%
	40	For vehicles of subheading 8701.20, or heading 8702, 8703 or 8704.....	kg			
	60	For marine propulsion engines..	kg			
	80	Other.....	kg			
8409.91.91		Other:				
		For vehicles of subheading 8701.20, or heading 8702, 8703 or 8704.....	3.1%	Free (A*,B,E,IL,J)	35%	
	10	Connecting rods.....	No. v	1.5% (CA) <u>1/</u>		
	90	Other.....	kg			
8409.91.92		For marine propulsion engines..	3.1%	Free (A,CA,E,IL,J)	35%	
	10	Connecting rods.....	No. v			
	90	Other.....	kg			
8409.91.99		Other.....	3.1%	Free (A,E,IL,J)	35%	
	10	Connecting rods.....	No. v	1.5% (CA) <u>1/</u>		
	90	Other.....	kg			
8409.99		Other:				
8409.99.10		Cast-iron parts, not advanced beyond cleaning, and machined only for the removal of fins, gates, sprues and risers or to permit location in finishing machinery.....	Free			10%
	40	For vehicles of subheading 8701.20, or heading 8702, 8703 or 8704.....	kg			
	60	For marine propulsion engines..	kg			
	80	Other.....	kg			
8409.99.91		Other:				
		For vehicles of subheading 8701.20, or heading 8702, 8703 or 8704.....	3.7%	Free (A,B,CA,E,IL, 35% J)		
	10	Connecting rods.....	No. v			
	90	Other.....	kg			
8409.99.92		For marine propulsion engines..	3.7%	Free (A,CA,E,IL,J)	35%	
	10	Connecting rods.....	No. v			
	90	Other.....	kg			
8409.99.99		Other.....	3.7%	Free (A*,CA,E,IL, 35% J)		
	10	Connecting rods.....	No. v			
	90	Other.....	kg			
8410		Hydraulic turbines, water wheels and regulators therefor; parts thereof:				
		Hydraulic turbines and water wheels:				
8410.11.00	00	Of a power not exceeding 1,000 kW.....	No.....	7.5%	Free (A,CA,E,IL,J)	27.5%
8410.12.00	00	Of a power exceeding 1,000 kW but not exceeding 10,000 kW.....	No.....	7.5%	Free (A,CA,E,IL,J)	27.5%
8410.13.00	00	Of a power exceeding 10,000 kW.....	No.....	7.5%	Free (A,CA,E,IL,J)	27.5%
8410.90.00	00	Parts, including regulators.....	X.....	7.5%	Free (A,CA,E,IL,J)	27.5%

1/ See subheading 9905.00.00.

[illegible]

8412	Other engines and motors, and parts thereof:			
8412.10.00	Reaction engines other than turbojets.....	5%	Free	(A,B,C,CA,E, 35% IL,J)
10	Missile and rocket engines.....	No.		
90	Other.....	No.		
8412.21.00	Hydraulic power engines and motors:			
	Linear acting (cylinders).....	3.4%	Free	(A,B,C,CA,E, 27.5% IL,J)
15	Tie-rod type.....	No.		
30	Weld fused type.....	No.		
	Other:			
45	Telescoping.....	No.		
60	Rodless.....	No.		
75	Other.....	No.		
8412.29	Other:			
8412.29.40	00 Hydrojet engines for marine propulsion.....	No..... 2.4%	Free	(A,CA,E,IL,J) 30%
8412.29.80	Other.....	3.4%	Free	(A,B,C,CA,E, 27.5% IL,J)
	Unlimited rotary acting:			
15	Gear type.....	No.		
30	Radial piston type.....	No.		
45	Axial piston type.....	No.		
60	Other.....	No.		
75	Other.....	No.		
8412.31.00	Pneumatic power engines and motors:			
	Linear acting (cylinders).....	3.4%	Free	(A,B,C,CA, E,IL,J) 27.5%
40	Tie-rod type.....	No.		
80	Other.....	No.		
8412.39.00	Other.....	3.4%	Free	(A,B,C,CA, E,IL,J) 27.5%
40	Unlimited rotary acting.....	No.		
80	Other.....	No.		
8412.80	Other engines and motors:			
8412.80.10	00 Spring-operated and weight-operated motors.....	No..... 4%	Free	(A,C,CA,E, 35% IL,J)
8412.80.90	00 Other.....	X..... 3.4%	Free	(A,C,CA,E, 27.5% IL,J)
8412.90	Parts:			
8412.90.10	00 Of hydrojet engines for marine propulsion.....	X..... 2.4%	Free	(A,CA,E,IL,J) 30%
8412.90.90	Other.....	3.4%	Free	(A,B,C,CA,E, 27.5% IL,J)
	Of hydraulic power engines and motors:			
05	Of linear acting engines and motors.....	X		
15	Other.....	X		
	Of pneumatic power engines and motors:			
25	Of linear acting engines and motors.....	X		
35	Other.....	X		
50	Of reaction engines other than turbojets.....	X		
80	Other.....	X		

8413		Pumps for liquids, whether or not fitted with a measuring device; liquid elevators; part thereof:							
		Pumps fitted or designed to be fitted with a measuring device:							
8413.11.00	00	Pumps for dispensing fuel or lubricants, of the type used in filling-stations or in garages.....	No.....	3%	Free	(A,CA,E,IL,J)	35%		
8413.19.00	00	Other.....	No.....	3%	Free	(A,B,C,CA,E,IL,J)	35%		
8413.20.00	00	Hand pumps, other than those of subheading 8413.11 or 8413.19.....	No.....	3%	Free	(A,C,CA,E,IL,J)	35%		
8413.30		Fuel, lubricating or cooling medium pumps for internal combustion piston engines:							
8413.30.10	00	Fuel-injection pumps for compression-ignition engines.....	No.....	2.5%	Free	(A,B,C,CA,E,IL,J)	35%		
8413.30.90		Other.....		3%	Free	(A,B,C,CA,E,IL,J)	35%		
	30	Fuel pumps.....	No.						
	60	Lubricating pumps.....	No.						
	90	Other.....	No.						
8413.40.00	00	Concrete pumps.....	No.....	3%	Free	(A,CA,E,IL,J)	35%		
8413.50.00		Other reciprocating positive displacement pumps.....		3%	Free	(A,B,C,CA,E,IL,J)	35%		
	10	Oil well and oil field pumps.....	No.						
	50	Diaphragm pumps.....	No.						
		Other:							
		Hydraulic fluid power pumps:							
	70	Radial piston type.....	No.						
	80	Other.....	No.						
	90	Other.....	No.						
8413.60.00		Other rotary positive displacement pumps.....		3%	Free	(A,B,C,CA,E,IL,J)	35%		
		Hydraulic fluid power pumps:							
	20	Vane type.....	No.						
	30	Gear type.....	No.						
	40	Other.....	No.						
		Other:							
	50	Oil well and oil field pumps.....	No.						
	70	Roller pumps.....	No.						
	90	Other.....	No.						

8413 (con.)		Pumps for liquids, whether or not fitted with a measuring device; liquid elevators; part thereof (con.):					
8413.70		Other centrifugal pumps:					
8413.70.10	00	Stock pumps imported for use with machines for making cellulosic pulp, paper or paperboard.....	No.....	Free			35%
8413.70.20		Other.....	3%	Free	(A,B,C,CA,E IL,J)		35%
	04	Submersible pumps.....	No.				
		Other:					
		Single-stage, single-suction, close-coupled:					
	05	With discharge outlet under 5.08 cm in diameter.....	No.				
	15	With discharge outlet 5.08 cm or over in diameter.....	No.				
		Single-stage, single-suction, frame-mounted:					
	22	With discharge outlet under 7.6 cm in diameter..	No.				
	25	With discharge outlet 7.6 cm or over in diameter.....	No.				
	30	Single-stage, double-suction...	No.				
	40	Multi-stage, single- or double-suction.....	No.				
	90	Other.....	No.				
8413.81.00		Other pumps; liquid elevators:					
		Pumps.....	3%	Free	(A,B,C,CA,E IL,J)		35%
	20	Turbine pumps.....	No.				
	30	Household water systems, self-contained; and windmill pumps.....	No.				
	40	Other.....	No.				
8413.82.00	00	Liquid elevators.....	No.....	3%	Free	(A,CA,E,IL,J)	35%
8413.91		Parts:					
		Of pumps:					
8413.91.10	00	Of fuel-injection pumps for compression-ignition engines.....	X.....	2.5%	Free	(A,B,C,CA,E IL,J)	35%
8413.91.20	00	Of stock pumps imported for use with machines for making cellulosic pulp, paper or paperboard.....	X.....	Free			35%
8413.91.90		Other.....	3%	Free	(A,B,C,CA,E IL,J)		35%
	10	Of subheading 8413.30.90.....	X				
	50	Of hydraulic fluid power pumps.....	X				
		Other:					
	70	Mechanical seals.....	No.				
	80	Other.....	X				
8413.92.00	00	Of liquid elevators.....	X.....	3%	Free	(A,CA,E,IL,J)	35%

8414		Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; parts thereof:						
8414.10.00	00	Vacuum pumps.....	No.....	3.7%	Free	(A,B,C,CA,E IL,J)	35%	
8414.20.00	00	Hand- or foot-operated air pumps.....	No.....	3.7%	Free	(A,B,C,CA,E IL,J)	35%	
8414.30		Compressors of a kind used in refrigerating equipment (including air conditioning):						
8414.30.40	00	Not exceeding 1/4 horsepower.....	No.....	3.4%	Free	(A,B,C,CA,E IL,J)	35%	
8414.30.80		Other.....		3.4%	Free	(A,B,C,CA,E IL,J)	35%	
		Screw type:						
	10	Not exceeding 200 horsepower...	No.					
	20	Exceeding 200 horsepower.....	No.					
		Other:						
		For all refrigerants except ammonia:						
	30	For motor vehicles.....	No.					
		Other:						
	50	Exceeding 1/4 horsepower but not exceeding 1 horsepower.....	No.					
	60	Exceeding 1 horsepower but not exceeding 3 horsepower.....	No.					
	70	Exceeding 3 horsepower but not exceeding 10 horsepower.....	No.					
	80	Exceeding 10 horsepower.....	No.					
	90	For ammonia.....	No.					
8414.40.00	00	Air compressors mounted on a wheeled chassis for towing.....	No.....	3.4%	Free	(A,CA,E,IL,J)	35%	
8414.51.00		Fans:						
		Table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor of an output not exceeding 125 W.....					4.7%	Free (A,C,E,IL,J) 35%
		For permanent installation:						2.3% (CA) <u>1/</u>
	30	Ceiling fans.....	No.					
	60	Other.....	No.					
	90	Other.....	No.					
8414.59		Other:						
8414.59.10	00	Blowers for pipe organs.....	No.....	Free			35%	
8414.59.80		Other.....		4.7%	Free	(A,B,C,CA,E IL,J)	35%	
	40	Suitable for use with motor vehicles.....	No.					
		Other:						
	60	Centrifugal.....	No.					
	90	Axial.....	No.					
	95	Other.....	No.					
8414.60.00	00	Hoods having a maximum horizontal side not exceeding 120 cm.....	No.....	4.7%	Free	(A,B,E,IL,J) 2.3% (CA)	35%	

1/ See subheading 9905.84.08.

8414 (con.)	Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; parts thereof (con.):				
8414.80	Other, except parts:				
8414.80.10	Air compressors.....		3.4%	Free (A,B,C,CA,E IL,J)	35%
	Stationary:				
	Reciprocating:				
05	Not exceeding 746 W.....		No.		
15	Exceeding 746 W but not exceeding 4.48 kW.....		No.		
25	Exceeding 4.48 kW but not exceeding 8.21 kW.....		No.		
35	Exceeding 8.21 kW but not exceeding 11.19 kW.....		No.		
40	Exceeding 11.19 kW but not exceeding 19.4 kW.....		No.		
45	Exceeding 19.4 kW but not exceeding 74.6 kW.....		No.		
55	Exceeding 74.6 kW.....		No.		
	Rotary:				
60	Not exceeding 11.19 kW....		No.		
65	Exceeding 11.19 kW but under 22.38 kW.....		No.		
70	22.38 kW and over but not exceeding 74.6 kW.....		No.		
75	Exceeding 74.6 kW.....		No.		
80	Other.....		No.		
	Portable:				
85	Under 0.57 cubic meters per minute.....		No.		
90	Other.....		No.		
8414.80.20	Other compressors.....		3.4%	Free (A,B,C,CA,E IL,J)	35%
10	Centrifugal and axial.....		No.		
	Other, including reciprocating and rotary:				
50	Not exceeding 186.5 kW.....		No.		
60	Exceeding 186.5 kW but not exceeding 746 kW.....		No.		
70	Exceeding 746 kW.....		No.		
8414.80.90	Other.....		3.7%	Free (A,B,C,CA,E IL,J)	35%



8414 (con.)	Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; parts thereof (con.):				
8414.90	Parts:				
8414.90.10	Of fans (including blowers) and ventilating or recycling hoods.....				4.7%
				Free (A,B,C,CA,E IL,J)	35%
40	Of fans of subheading 8414.51.00....				X
80	Other.....				X
8414.90.20	Of compressors.....				3.4%
				Free (A,B,C,CA,E IL,J)	35%
	Of refrigerating and air conditioning compressors:				
20	Compressor housings.....				No.
40	Other.....				X
	Other:				
	Of compressors of subheading 8414.40:				
45	Compressor housings.....				No.
55	Other.....				X
	Other:				
65	Compressor housings.....				No.
75	Other.....				X
8414.90.90	Other.....				3.7%
				Free (A,B,C,CA,E IL,J)	35%
40	Of vacuum pumps.....				X
80	Other.....				X

8415	Air conditioning machines, comprising a motor-driven fan and elements for changing the temperature and humidity, including those machines in which the humidity cannot be separately regulated; parts thereof:				
8415.10.00	Window or wall types, self-contained.....	2.2%		Free (A,E,IL,J)	35%
				1.1% (CA) <u>1/</u>	
40	Less than 2.93 kW per hour.....	No.			
60	2.93 kW per hour or greater but less than 4.98 kW per hour.....	No.			
80	4.98 kW per hour or greater.....	No.			
8415.81.00	Other, except parts: Incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle.....	2.2%		Free (A,B,C,E,IL,J)	35%
				1.1% (CA) <u>2/</u>	
	Self-contained:				
10	Not exceeding 17.58 kW per hour.....	No.			
20	Exceeding 17.58 kW per hour....	No.			
30	Other.....	No.			
8415.82.00	Other, incorporating a refrigerating unit.....	2.2%		Free (A*,B,C,CA,E,IL,J)	35%
	Self-contained machines and remote condenser type air conditioners other than year-round units:				
05	Not exceeding 17.58 kW per hour.....	No.			
10	Exceeding 17.58 kW per hour....	No.			
15	Year-round units (heating and cooling): Not exceeding 17.58 kW per hour.....	No.			
20	Exceeding 17.58 kW per hour....	No.			
25	Air conditioning evaporator coils... Room or central station air conditioning units for use with water chillers:	No.			
30	Room fan coil units.....	No.			
35	Central station air handlers...	No.			
40	Other.....	No.			
55	Dehumidifiers: With a rated water removal capacity of less than 35 liters over a 24 hour period.....	No.			
60	Other.....	No.			
65	Other air conditioning machines incorporating a refrigerating unit..	No.			
8415.83.00	Not incorporating a refrigerating unit...	2.2%		Free (A,B,C,CA,E,IL,J)	35%
40	Automotive air conditioners.....	No.			
	Other:				
	Heat exchangers including condensing units:				
50	Condensing units: Not exceeding 17.58 kW per hour....	No.			
60	Exceeding 17.58 kW per hour.....	No.			
70	Other.....	No.			
90	Other air conditioning machines not incorporating a refrigerating unit.....	No.			
8415.90.00	Parts.....	2.2%		Free (A*,B,C,E,IL,J)	35%
				1.1% (CA) <u>2/3/</u>	
40	Of automotive air conditioners.....	X			
60	Of heat pumps.....	X			
90	Other.....	X			

1/ See subheading 9905.84.03.

2/ See subheading 9905.00.00.

3/ See subheadings 9905.84.14 and 9905.84.16.

8416		Furnace burners for liquid fuel, for pulverized solid fuel or for gas; mechanical stokers, including their mechanical grates, mechanical ash dischargers and similar appliances; parts thereof:							
8416.10.00	00	Furnace burners for liquid fuel.....	No.....	3.4%	Free	(A,CA,E,IL,J)	27.5%		
8416.20.00		Other furnace burners, including combination burners.....		3.4%	Free	(A,CA,E,IL,J)	27.5%		
	40	Gas burners.....	No.						
	80	Other.....	No.						
8416.30.00	00	Mechanical stokers, including their mechanical grates, mechanical ash dischargers and similar appliances.....	X.....	3.4%	Free	(A,E,IL,J)	27.5%		
					1.7%	(CA)			
8416.90.00	00	Parts.....	X.....	3.4%	Free	(A,E,IL,J)	27.5%		
					1.7%	(CA)	<u>1</u> /		
8417		Industrial or laboratory furnaces and ovens, including incinerators, nonelectric, and parts thereof:							
8417.10.00	00	Furnaces and ovens for the roasting, melting or other heat treatment of ores, pyrites or of metals.....	No.....	5.7%	Free	(A,CA,E,IL,J)	45%		
8417.20.00	00	Bakery ovens, including biscuit ovens.....	No.....	5.7%	Free	(A,CA,E,IL,J)	45%		
8417.80.00	00	Other, except parts.....	No.....	5.7%	Free	(A,CA,E,IL,J)	45%		
8417.90.00	00	Parts.....	X.....	5.7%	Free	(A,CA,E,IL,J)	45%		

1/ See subheading 9905.84.04.

8418	Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps, other than the air conditioning machines of heading 8415; parts thereof:				
8418.10.00	Combined refrigerator-freezers, fitted with separate external doors.....				2.9%
				Free (A,B,C,E,IL,J)	35%
				1.4%	(CA)
	Compression type:				
10	Having a refrigerated volume of under 184 liters.....				No.
20	Having a refrigerated volume of 184 liters and over but under 269 liters.....				No.
30	Having a refrigerated volume of 269 liters and over but under 382 liters.....				No.
40	Having a refrigerated volume of 382 liters and over.....				No.
90	Other.....				No.
8418.21.00	Refrigerators, household type: Compression type.....				2.9%
				Free (A,E,IL,J)	35%
				1.4%	(CA)
10	Having a refrigerated volume of under 184 liters.....				No.
20	Having a refrigerated volume of 184 liters and over but under 269 liters.....				No.
30	Having a refrigerated volume of 269 liters and over but under 382 liters.....				No.
90	Having a refrigerated volume of 382 liters and over.....				No.
8418.22.00	Absorption type, electrical.....				2.9%
8418.29.00	Other.....				2.9%
				Free (A,CA,E,IL,J)	35%
				1.4%	(CA)
8418.30.00	Freezers of the chest type, not exceeding 800 liters capacity.....				2.9%
				Free (A,C,E,IL,J)	35%
				1.4%	(CA)
8418.40.00	Freezers of the upright type, not exceeding 900 liters capacity.....				2.9%
				Free (A,C,E,IL,J)	35%
				1.4%	(CA)

8418 (con.)	Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps, other than the air conditioning machines of heading 8415; parts thereof (con.):				
8418.50.00	Other refrigerating or freezing chests, cabinets, display counters, showcases and similar refrigerating or freezing furniture...				2.9%
				Free (A,E,IL,J)	35%
				1.4% (CA)	
40	Freezing.....	No.			
80	Other.....	No.			
	Other refrigerating or freezing equipment; heat pumps:				
8418.61.00	Compression type units whose condensers are heat exchangers.....				2.9%
				Free (A,B,C,E,IL,J)	35%
				1.4% (CA) <u>1/</u>	
40	Finned coil type.....	No.			
80	Other.....	No.			
8418.69.00	Other.....				2.9%
				Free (A,B,C,E,IL,J)	35%
				1.4% (CA) <u>1/</u>	
	Icemaking machines:				
10	Self-contained, cube and flake with a capacity not exceeding 227 kg.....	No.			
15	Other.....	No.			
20	Drinking water coolers, self-contained.....	No.			
25	Soda fountain and beer dispensing equipment.....	No.			
	Centrifugal liquid chilling refrigerating units:				
45	Open-type.....	No.			
50	Hermetic-type.....	No.			
55	Absorption liquid chilling units....	No.			
60	Reciprocating liquid chilling refrigerating units.....	No.			
	Other refrigerating or freezing equipment:				
90	Household.....	No.			
95	Other.....	No.			
	Parts:				
8418.91.00	Furniture designed to receive refrigerating or freezing equipment.....				X..... 2.9%
				Free (A,B,E,IL,J)	35%
				1.4% (CA)	
8418.99.00	Other.....				2.9%
				Free (A,B,E,IL,J)	35%
				1.4% (CA)	
	Refrigeration condensing units:				
05	Not exceeding 746 W.....	No.			
10	Exceeding 746 W but not exceeding 2.2 kW.....	No.			
15	Exceeding 2.2 kW but not exceeding 7.5 kW.....	No.			
20	Exceeding 7.5 kW but not exceeding 22.3 kW.....	No.			
25	Exceeding 22.3 kW.....	No.			
	Other:				
50	Parts of combined refrigerator-freezers fitted with separate external doors and parts of household type refrigerators.....	X			
60	Other.....	X			

1/ See subheading 9905.84.10.

8419			Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, distilling, rectifying, sterilizing, pasteurizing, steaming, drying, evaporating, vaporizing, condensing or cooling, other than machinery or plant of a kind used for domestic purposes; instantaneous or storage water heaters, nonelectric; parts thereof:				
			Instantaneous or storage water heaters, nonelectric:				
8419.11.00	00		Instantaneous gas water heaters.....	No.....	4%	Free (A,E,IL,J) 45% 2% (CA)	
8419.19.00			Other.....		4%	Free (A*,E,IL,J) 45% 2% (CA)	
	20		Instantaneous water heaters.....	No.			
	40		Solar water heaters.....	No.			
	60		Other.....	No.			
8419.20.00	00		Medical, surgical or laboratory sterilizers... Dryers:	No.....	4.2%	Free (A,CA,E,IL,J) 35%	
8419.31.00	00		For agricultural products.....	No.....	4.2%	Free (A,CA,E,IL,J) 35%	
8419.32			For wood, paper pulp, paper or paper-board:				
8419.32.10	00		For wood.....	No.....	4.2%	Free (A,CA,E,IL,J) 35%	
8419.32.50	00		Other.....	No.....	2.4%	Free (A,CA,E,IL,J) 35%	
8419.39.00			Other.....		4.2%	Free (A,CA,E,IL,J) 35%	
	40		For food and beverages.....	No.			
	80		Other.....	No.			
8419.40.00			Distilling or rectifying plant.....		4.2%	Free (A,CA,E,IL,J) 35%	
	40		For food and beverages.....	No.			
	80		Other.....	No.			
8419.50.00			Heat exchange units.....		4.2%	Free (A,C,CA,E,IL,J) 35%	
	40		Brazed aluminum plate-fin heat exchangers.....	No.			
	80		Other.....	No.			
8419.60.00			Machinery for liquefying air or other gases... Machinery containing brazed aluminum plate-fin heat exchangers.....		4.2%	Free (A,CA,E,IL,J) 35%	
	40			No.			
	80		Other.....	No.			

8419 (con.)		Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, distilling, rectifying, sterilizing, pasteurizing, steaming, drying, evaporating, vaporizing, condensing or cooling, other than machinery or plant of a kind used for domestic purposes; instantaneous or storage water heaters, nonelectric; parts thereof (con.):					
		Other machinery, plant or equipment:					
8419.81		For making hot drinks or for cooking or heating food:					
8419.81.10	00	Microwave ovens.....	No.....	4%	Free (A,C,E,IL,J) 2% (CA)	35%	
8419.81.50		Other cooking stoves, ranges and ovens.....	.....	Free		35%	
	40	For use in civil aircraft.....	No.				
	80	Other.....	No.				
8419.81.90		Other.....	.....	4.1%	Free (A,C,CA,E, IL,J)	35%	
	40	Of a type used in restaurants, hotels or similar locations.....	No.				
	80	Other.....	No.				
8419.89		Other:					
8419.89.10	00	For making paper pulp, paper or paperboard.....	No.....	2.4%	Free (A,CA,E,IL,J)	35%	
8419.89.50		Other.....	.....	4.2% <u>1</u> /	Free (A,CA,E,IL,J)	35%	
	20	Designed for cooling:					
	40	For food and beverages....	No.				
		Other.....	No.				
	60	Other:					
	70	For food and beverages....	No.				
	75	For rubber and plastics...	No.				
		For other materials.....	No.				
8419.90		Parts:					
8419.90.10	00	Of instantaneous or storage water heaters.....	X.....	4%	Free (A*,E,IL,J) 2% (CA)	45%	
8419.90.20	00	Of machinery and plant for making paper pulp, paper or paperboard.....	X.....	2.4%	Free (A,CA,E,IL,J)	35%	
8419.90.30	00	Of heat exchange units.....	X.....	4.2% <u>1</u> /	Free (A,C,CA,E, IL,J)	35%	
8419.90.90		Other.....	.....	4.2% <u>1</u> /	Free (A,CA,E,IL,J)	35%	
	20	Of an apparatus of a type used in restaurants, hotels or similar locations.....	X				
	40	Of medical, surgical or laboratory sterilizers.....	X				
	60	Other.....	X				

1/ See heading 9902.84.19.

8420		Calendering or other rolling machines, other than for metals or glass, and cylinders therefor; parts thereof:					
8420.10		Calendering or other rolling machines:					
8420.10.10	00	Textile calendering or rolling machines.....	No.....	5.1%	Free (A,CA,E,IL,J)	40%	
8420.10.20	00	Calendering or similar rolling machines for making paper pulp, paper or paper- board.....	No.....	Free		35%	
8420.10.90		Other.....		3.7%	Free (A,CA,E,IL,J)	35%	
	40	Calendering or other rolling machines for rubber and plastics....	No.				
	80	Other.....	No.				
8420.91		Parts:					
8420.91.10	00	Cylinders: For textile calendering or rolling machines.....	No.....	5.1%	Free (A,CA,E,IL,J)	40%	
8420.91.20	00	For calendering or other rolling machines for machines for making paper pulp, paper or paperboard....	No.....	Free		35%	
8420.91.90	00	Other.....	No.....	3.7%	Free (A,CA,E,IL,J)	35%	
8420.99		Other:					
8420.99.10	00	Of machines for processing textiles.....	X.....	5.1%	Free (A,CA,E,IL,J)	40%	
8420.99.20	00	Of machines for making paper pulp, paper or paperboard.....	X.....	Free		35%	
8420.99.90	00	Other.....	X.....	3.7%	Free (A,CA,E,IL,J)	35%	



8421		Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases; parts thereof:						
		Centrifuges, including centrifugal dryers:						
8421.11.00	00	Cream separators.....	No.....	3.7%	Free	(A,CA,E,IL,J)	25%	
8421.12.00	00	Clothes-dryers.....	No.....	3.9%	Free	(A,CA,E,IL,J)	25%	
8421.19.00	00	Other.....	No.....	3.9%	Free	(A,C,CA,E, IL,J)	25%	
		Filtering or purifying machinery and apparatus for liquids:						
8421.21.00	00	For filtering or purifying water.....	No.....	3.9%	Free	(A,C,CA,E, IL,J)	35%	
8421.22.00	00	For filtering or purifying beverages other than water.....	No.....	3.9%	Free	(A,CA,E,IL,J)	35%	
8421.23.00	00	Oil or fuel filters for internal combustion engines.....	X.....	3.1%	Free	(A,B,C,CA,E IL,J)	35%	
8421.29.00		Other.....		3.9%	Free	(A,B,C,CA,E IL,J)	35%	
	20	Oil-separation equipment.....	X					
	40	Other: Hydraulic fluid power filters, rated at 1,000 kPa or greater..	No.					
	60	Other.....	X					
		Filtering or purifying machinery and apparatus for gases:						
8421.31.00	00	Intake air filters for internal combustion engines.....	X.....	3.1%	Free	(A,B,C,CA,E IL,J)	35%	
8421.39.00		Other.....		3.9%	Free	(A,B,C,CA,E, IL,J)	35%	
	10	Dust collection and air purification equipment.....	X					
		Other: Industrial gas cleaning equipment:						
	20	Electrostatic precipitators.....	No.					
	30	Other.....	No.					
	40	Gas separation equipment.....	No.					
	60	Other: Pneumatic fluid power filters, rated at 550 kPa or greater.....	No.					
	90	Other.....	X					
		Parts:						
8421.91.00	00	Of centrifuges, including centrifugal dryers.....	X.....	3.9%	Free	(A,CA,E,IL,J)	25%	
8421.99.00		Other.....		3.9%	Free	(A,B,CA,E,IL, J)	35%	
	40	Parts of machinery and apparatus for filtering or purifying water....	X					
	80	Other.....	X					

8422		Dishwashing machines; machinery for cleaning or drying bottles or other containers; machinery for filling, closing, sealing, capsuling or labeling bottles, cans, boxes, bags or other containers; other packing or wrapping machinery; machinery for aerating beverages; parts thereof:					
		Dishwashing machines:					
8422.11.00	00	Of the household type.....	No.....	3.6%	Free (A,E,IL,J)	35%	
					1.8% (CA)		
8422.19.00	00	Other.....	No.....	3.6%	Free (A,E,IL,J)	35%	
					1.8% (CA)		
8422.20.00	00	Machinery for cleaning or drying bottles or other containers.....	No.....	3.6%	Free (A,CA,E,IL,J)	35%	
8422.30		Machinery for filling, closing, sealing, capsuling or labeling bottles, cans, boxes, bags or other containers; machinery for aerating beverages:					
8422.30.10	00	Can-sealing machines.....	No.....	4.5%	Free (A,CA,E,IL,J)	30%	
8422.30.90		Other.....		3.6%	Free (A,CA,E,IL,J)	35%	
	10	Machines for aerating beverages.....	No.				
	20	Labeling machines.....	No.				
		Other:					
		Machinery for filling, closing, sealing, capsuling or labeling bottles, cans or similar containers:					
		Machines for filling, whether or not capable of performing other operations:					
	30	Vacuum or gas packaging.....	No.				
	40	Other.....	No.				
		Machines which perform only the following operations: capping, lidding, sealing or closing:					
	50	Vacuum or gas packaging.....	No.				
	60	Other.....	No.				
	70	Other.....	No.				
		Machinery for filling, closing, sealing, capsuling or labeling boxes, bags or similar containers:					
	80	Machines for opening, filling and closing bags..	No.				
	90	Other.....	No.				
8422.40		Other packing or wrapping machinery:					
8422.40.10		Machines for packaging pipe tobacco; machines for wrapping candy; machines for wrapping cigarette packages; and combination candy cutting and wrapping machines.....		3.4%	Free (A,CA,E,IL,J)	35%	
	10	Machines for wrapping candy.....	No.				
	90	Other.....	No.				
8422.40.90		Other.....		3.6%	Free (A,CA,E,IL,J)	35%	
	40	Strapping machines.....	No.				
	80	Other.....	No.				

8422 (con.)	Dishwashing machines; machinery for cleaning or drying bottles or other containers; machinery for filling, closing, sealing, capsuling or labeling bottles, cans, boxes, bags or other containers; other packing or wrapping machinery; machinery for aerating beverages; parts thereof (con.):				
8422.90	Parts:				
8422.90.05	Of dishwashing machines.....	3.6%	Free (A*,E,IL,J)	35%	
			1.8% (CA) <u>1/</u>		
40	Of the household type.....	X			
80	Other.....	X			
8422.90.10	Of can-sealing machines.....	X.....	4.5%	Free (A,CA,E,IL,J)	30%
8422.90.20	Of machines for packaging pipe tobacco, wrapping candy or wrapping cigarette packages, and of combination candy cutting and wrapping machines.....	X.....	3.4%	Free (A,CA,E,IL,J)	35%
8422.90.90	Other.....		3.6%	Free (A,CA,E,IL,J)	35%
20	Of machinery for cleaning or drying bottles or other containers..	X			
	Other:				
30	Of strapping machines.....	X			
60	Of other wrapping and packaging machines.....	X			
95	Other.....	X			
8423	Weighing machinery (excluding balances of a sensitivity of 5 cg or better), including weight-operated counting or checking machines; weighing machine weights of all kinds; parts of weighing machinery:				
8423.10.00	Personal weighing machines, including baby scales; household scales.....		4.4%	Free (A,CA,E,IL,J)	45%
10	Digital electronic type.....	No.			
30	Other:				
	Of a kind suitable for carrying on the person.....	No.			
60	Other.....	No.			
8423.20.00	Scales for continuous weighing of goods on conveyors.....	No.....	4.4%	Free (A,CA,E,IL,J)	45%
8423.30.00	Constant-weight scales and scales for discharging a predetermined weight of material into a bag or container, including hopper scales.....	No.....	4.4%	Free (A,CA,E,IL,J)	45%
8423.81.00	Other weighing machinery:				
	Having a maximum weighing capacity not exceeding 30 kg.....		4.4%	Free (A,CA,E,IL,J)	45%
	Digital electronic type:				
10	Counting scales.....	No.			
20	Retail scales, non-computing...	No.			
30	Retail scales, computing.....	No.			
40	Other.....	No.			
50	Other.....	No.			
8423.82.00	Having a maximum weighing capacity exceeding 30 kg but not exceeding 5,000 kg.....		4.4%	Free (A,CA,E,IL,J)	45%
10	Digital electronic type.....	No.			
50	Other.....	No.			
8423.89.00	Other.....		4.4%	Free (A,CA,E,IL,J)	45%
10	Digital electronic type.....	No.			
50	Other.....	No.			
8423.90.00	Weighing machine weights of all kinds; parts of weighing machinery.....		5.5%	Free (A,CA,E,IL,J)	45%
40	Digital weight indicators.....	No.			
80	Other.....	X			

1/ See subheading 9905.84.21.

8424		Mechanical appliances (whether or not hand operated) for projecting, dispersing or spraying liquids or powders; fire extinguishers, whether or not charged; spray guns and similar appliances; steam or sand blasting machines and similar jet projecting machines; parts thereof:						
8424.10.00	00	Fire extinguishers, whether or not charged....	No.....	3.7%	Free	(A,B,C,E,IL, 35% J)		
					1.8%	(CA) <u>1/</u>		
8424.20		Spray guns and similar appliances:						
8424.20.10	00	Simple piston pump sprays and powder bellows.....	X.....	5.7%	Free	(A*,B,CA,E, 45% IL,J)		
8424.20.90	00	Other.....	X.....	3.7%	Free	(A,B,CA,E,IL, 35% J)		
8424.30		Steam or sand blasting machines and similar jet projecting machines:						
8424.30.10	00	Sand blasting machines.....	No.....	Free			Free	
8424.30.90	00	Other.....	X.....	3.7%	Free	(A,CA,E,IL,J)	35%	
		Other appliances:						
8424.81		Agricultural or horticultural:						
8424.81.10	00	Sprayers (except sprayers, self-contained, having a capacity not over 20 liters).....	X.....	Free			Free	
8424.81.90		Other.....		3.7%	Free	(A,CA,E,IL,J)	35%	
	10	Irrigation equipment:						
		Self-propelled, center pivot.....	No.					
	20	Other.....	No.					
	30	Other.....	No.					
8424.89.00		Other.....		3.7%	Free	(A,B,CA,E,IL, 35% J)		
	10	Sprinkler systems (fire extinguishing equipment).....	No.					
	40	Spraying appliances designed for etching, stripping or cleaning semiconductor wafers.....	No.					
	80	Other.....	No.					
8424.90		Parts:						
8424.90.05	00	Of fire extinguishers.....	X.....	3.7%	Free	(A,B,E,IL,J) 35% 1.8% (CA) <u>2/</u>		
8424.90.10	00	Of simple piston pump sprays and powder bellows.....	X.....	5.7%	Free	(A,B,CA,E,IL, 45% J)		
8424.90.20	00	Of sand blasting machines.....	X.....	Free			Free	
8424.90.90		Other.....		3.7%	Free	(A,B,CA,E,IL, 35% J)		
	40	Of steam and similar jet projecting machines.....	X					
	80	Other.....	X					

1/ See subheading 9905.00.00.2/ See subheading 9905.84.26.



8427		Fork-lift trucks; other works trucks fitted with lifting or handling equipment:							
8427.10.00		Self-propelled trucks powered by an electric motor.....	Free					35%	
	10	Operator riding.....	No.						
	60	Automated guided vehicle (AGV).....	No.						
	90	Other.....	No.						
8427.20.00	00	Other self-propelled trucks.....	No.....	Free				35%	
8427.90.00	00	Other trucks.....	No.....	Free				35%	
8428		Other lifting, handling, loading or unloading machinery (for example, elevators, escalators, conveyors, teleferics):							
8428.10.00	00	Passenger or freight elevators other than continuous action; skip hoists.....	No.....	2%	Free	(A,B,C,CA,E IL,J)		35%	
8428.20.00		Pneumatic elevators and conveyors.....		2%	Free	(A,B,C,CA,E IL,J)		35%	
	10	Conveyors.....	No.						
	50	Elevators.....	No.						
		Other continuous-action elevators and conveyors, for goods or materials:							
8428.31.00	00	Specially designed for underground use...	No.....	2%	Free	(A,CA,E,IL,J)		35%	
8428.32.00	00	Other, bucket type.....	No.....	2%	Free	(A,B,CA,E,IL,J)		35%	
8428.33.00	00	Other, belt type.....	No.....	2%	Free	(A,B,C,CA,E IL,J)		35%	
8428.39.00	00	Other.....	No.....	2%	Free	(A,B,C,CA,E IL,J)		35%	
8428.40.00	00	Escalators and moving walkways.....	No.....	2%	Free	(A,CA,E,IL,J)		35%	
8428.50.00	00	Mine wagon pushers, locomotive or wagon tracers, wagon tippers and similar railway wagon handling equipment.....	No.....	2%	Free	(A,CA,E,IL,J)		35%	
8428.60.00	00	Teleferics, chair lifts, ski draglines; traction mechanisms for funiculars.....	No.....	2%	Free	(A,CA,E,IL,J)		35%	
8428.90.00		Other machinery.....		2%	Free	(A*,B,C,CA,E IL,J)		35%	
	02	Of a kind used in charging or discharging furnaces.....	No.						
	04	Of a kind used for radioactive materials.....	No.						
	06	Woodland log handling equipment (other than skidders).....	No.						
		Other:							
	10	Industrial robots.....	No.						
	20	Oil and gas field machinery.....	No.						
	30	Sidebooms and pipehandlers.....	No.						
	40	Loaders, underground mine type.....	No.						
	90	Other.....	No.						

8429	Self-propelled bulldozers, angledozers, graders, levelers, scrapers, mechanical shovels, excavators, shovel loaders, tamping machines and road rollers:				
	Bulldozers and angledozers:				
8429.11.00		Track laying.....	2.5%	Free	(A*,CA,E,IL, 35% J)
	10	New.....	No.		
	90	Used or rebuilt.....	No.		
8429.19.00		Other.....	2.5%	Free	(A,CA,E,IL,J) 35%
	10	New.....	No.		
	90	Used or rebuilt.....	No.		
8429.20.00		Graders and levelers.....	2.5%	Free	(A*,CA,E,IL, 35% J)
	00				
8429.30.00		Scrapers.....	2.5%	Free	(A*,CA,E,IL, 35% J)
		New:			
	20	Not exceeding 13.7 m³.....	No.		
	40	Exceeding 13.7 m³.....	No.		
	60	Used or rebuilt.....	No.		
8429.40.00		Tamping machines and road rollers.....	2.5%	Free	(A,CA,E,IL,J) 35%
		New:			
	20	Vibratory.....	No.		
	40	Other.....	No.		
	60	Used or rebuilt.....	No.		
		Mechanical shovels, excavators and shovel loaders:			
8429.51		Front-end shovel loaders:			
8429.51.10		Wheel-type.....	2%	Free	(A,CA,E,IL,J) 35%
		New:			
		Integral tractor shovel loaders, rear engine mounted:			
	05	2 wheel drive.....	No.		
		4 wheel drive with a bucket capacity of:			
	15	Under 1.5 m³....	No.		
	25	At least 1.5 m³ but under 2.2 m³....	No.		
	30	At least 2.2 m³ but under 2.9 m³....	No.		
	35	At least 2.9 m³ but under 3.8 m³....	No.		
	40	At least 3.8 m³ but under 5.2 m³....	No.		
	45	At least 5.2 m³ but under 7.6 m³....	No.		
	50	At least 7.6 m³ but under 11.4 m³...	No.		
	55	11.4 m³ and over.....	No.		
	60	Other.....	No.		
	65	Used or rebuilt.....	No.		

8429 (con.)	Self-propelled bulldozers, angledozers, graders, levelers, scrapers, mechanical shovels, excavators, shovel loaders, tamping machines and road rollers (con.):			
	Mechanical shovels, excavators and shovel loaders (con.):			
8429.51 (con.)	Front-end shovel loaders (con.):			
8429.51.50	Other.....	2.5%	Free (A,CA,E,IL,J) 35%	
	New:			
10	Less than 44.7 kW.....	No.		
20	At least 44.7 kW but under 67.1 kW.....	No.		
30	At least 67.1 kW but under 93.2 kW.....	No.		
40	At least 93.2 kW but under 119.3 kW.....	No.		
50	119.3 kW and over.....	No.		
8429.52	Used or rebuilt.....	No.		
	Machinery with a 360° revolving superstructure:			
8429.52.10	Backhoes, shovels, clamshells and draglines.....	2%	Free (A,CA,E,IL,J) 35%	
	New:			
	Crawler mounted:			
10	Hydraulic.....	No.		
20	Other.....	No.		
	Other:			
30	Hydraulic.....	No.		
40	Other.....	No.		
50	Used or rebuilt.....	No.		
8429.52.50	Other.....	2.5%	Free (A,CA,E,IL,J) 35%	
	New:			
10	Used or rebuilt.....	No.		
90	Used or rebuilt.....	No.		
8429.59	Other:			
8429.59.10	Backhoes, shovels, clamshells and draglines.....	2%	Free (A,CA,E,IL,J) 35%	
	New:			
30	Backhoes.....	No.		
60	Other.....	No.		
90	Used or rebuilt.....	No.		
8429.59.50	Other.....	2.5%	Free (A,CA,E,IL,J) 35%	
	New:			
	Ditchers and trenchers:			
20	Ladder type.....	No.		
40	Other.....	No.		
60	Other.....	No.		
80	Used or rebuilt.....	No.		



8430		Other moving, grading, leveling, scraping, excavating, tamping, compacting, extracting or boring machinery, for earth, minerals or ores; pile-drivers and pile-extractors; snowplows and snowblowers:							
8430.10.00	00	Pile-drivers and pile-extractors.....	No.....	2.5%	Free	(A,CA,E,IL,J)	35%		
8430.20.00		Snowplows and snowblowers.....		2.5%	Free	(A,E,IL,J)	35%		
					1.2%	(CA)			
		Snowblowers:							
	30	Attachment type.....	No.						
	60	Other.....	No.						
	90	Other.....	No.						
8430.31.00		Coal or rock cutters and tunneling machinery:							
		Self-propelled.....		2.5%	Free	(A,CA,E,IL,J)	35%		
	40	Rock breaking machines.....	No.						
	80	Other.....	No.						
8430.39.00		Other.....		2.5%	Free	(A,CA,E,IL,J)	35%		
	40	Rock breaking machines.....	No.						
	80	Other.....	No.						
8430.41.00	00	Other boring or sinking machinery:							
8430.49		Self-propelled.....	No.....	2.5%	Free	(A,CA,E,IL,J)	35%		
8430.49.40	00	Other:							
		Offshore oil and natural gas drilling and production platforms...	kg.....	5.7%	Free	(E,IL,J)	45%		
					2.8%	(CA)			
8430.49.80		Other.....		2.5%	Free	(A,CA,E,IL,J)	35%		
		For oil well and gas field drilling:							
	10	Rotary.....	No.						
	20	Other.....	No.						
		For water well drilling:							
	30	Rotary.....	No.						
	40	Other.....	No.						
	50	Other.....	No.						
8430.50		Other machinery, self-propelled:							
8430.50.10	00	Peat excavators.....	No.....	Free			35%		
8430.50.50	00	Other.....	No.....	2.5%	Free	(A,CA,E,IL,J)	35%		
		Other machinery, not self-propelled:							
8430.61.00	00	Tamping or compacting machinery.....	No.....	2.5%	Free	(A,CA,E,IL,J)	35%		
8430.62.00	00	Scrapers.....	No.....	2.5%	Free	(A,CA,E,IL,J)	35%		
8430.69.00	00	Other.....	No.....	2.5%	Free	(A,CA,E,IL,J)	35%		

8431	Parts suitable for use solely or principally with the machinery of headings 8425 to 8430:				
8431.10.00	10	Of machinery of heading 8425.....	2%	Free	(A,B,CA,E,IL, 35% J)
	10	Of machinery of subheading 8425.11 or 8425.19.....	X		
	90	Other.....	X		
8431.20.00	00	Of machinery of heading 8427.....	X.....	Free	35%
8431.31.00		Of machinery of heading 8428: Of passenger or freight elevators other than continuous action, skip hoists or escalators.....	2%	Free	(A,B,CA,E,IL, 35% J)
	20	Of skip hoists.....	X		
	40	Of escalators.....	X		
	60	Other.....	X		
8431.39.00		Other.....	2%	Free	(A,B,CA,E,IL, 35% J)
	10	Of elevators and conveyors.....	X		
	50	Other: Of oil and gas field machinery.....	X		
	70	Of the woodland log handling equipment of statistical reporting number 8428.90.0006..	X		
	80	Other.....	X		
8431.41.00		Of machinery of heading 8426, 8429 or 8430: Buckets, shovels, grabs and grips.....	2.5%	Free	(A,CA,E,IL,J) 35%
	20	Shovel attachments.....	No.		
	40	Clamshell (grapples) attachments....	No.		
	60	Dragline buckets.....	No.		
	80	Other.....	No.		
8431.42.00	00	Bulldozer or angledozer blades.....	No.....	2.5%	Free (A*,CA,E,IL, 35% J)

8431 (con.)		Parts suitable for use solely or principally with the machinery of headings 8425 to 8430 (con.): Of machinery of heading 8426, 8429 or 8430 (con.):					
8431.43		Parts for boring or sinking machinery of subheading 8430.41 or 8430.49:					
8431.43.40	00	Of offshore oil and natural gas drilling and productions platforms..	X.....	5.7%	Free (E,IL,J)	45%	
8431.43.80		Other.....		2.5%	Free (A,CA,E,IL,J)	35%	
	10	Of oil and gas field machinery.....	X				
	90	Of other boring or sinking machinery.....	X				
8431.49		Other:					
8431.49.10		Of machinery of heading 8426.....		2%	Free (A,B,CA,E,IL, 35%		
	10	Of machinery of subheadings 8426.11, 8426.19 and 8426.30.....	X				
	60	Of mobile lifting frames, straddle carriers and works trucks fitted with a crane....	X				
	90	Other.....	X				
8431.49.90		Other.....		2.5%	Free (A*,CA,E,IL, 35%		
		Attachments for mounting on machinery:					
	05	Backhoe attachments.....	No.				
	10	Front-end loader attachments.....	No.				
	15	Rippers and rooters.....	No.				
	20	Other.....	No.				
		Other:					
		Parts of coal or rock cutters and tunneling machinery:					
	25	Cast axle housings...	No.				
	30	Other.....	X				
		Parts of backhoes, shovels, clamshells and draglines:					
	35	Cast axle housings...	No.				
	40	Other.....	X				
		Other:					
	45	Scraper bowls for scrapers of sub- headings 8429.30 and 8430.62.....	No.				
	50	Track links.....	X				
	55	Cast axle housings...	No.				
	60	Other.....	X				

8432		Agricultural, horticultural or forestry machinery for soil preparation or cultivation; lawn or sports ground rollers; parts thereof:		
8432.10.00		Plows.....	Free	Free
	20	Moldboard plows except listers.....	No.	
	40	Disc plows.....	No.	
	60	Other.....	No.	
		Harrows, scarifiers, cultivators, weeders and hoes:		
8432.21.00	00	Disc harrows.....	No.....	Free
8432.29.00		Other.....	Free	Free
		Cultivators, weeders and hoes:		
	40	Cultivators, tractor drawn or for tractor mounting.....	No.	
	60	Walk behind rotary tillers.....	No.	
	80	Other.....	No.	
	90	Other.....	No.	
8432.30.00		Seeders, planters and transplanters.....	Free	Free
	10	Planters and transplanters.....	No.	
	90	Seeders.....	No.	
8432.40.00	00	Manure spreaders and fertilizer distributors..	No.....	Free
8432.80.00	00	Other machinery.....	No.....	Free
8432.90.00		Parts.....	Free	Free
	05	Of plows.....	X	
	15	Of harrows, scarifiers, cultivators, weeders and hoes.....	X	
	30	Of seeders, planters, transplanters, manure spreaders and fertilizer distributors.....	X	
	80	Of other machinery.....	X	

8433	Harvesting or threshing machinery, including straw or fodder balers; grass or hay mowers; machines for cleaning, sorting or grading eggs, fruit or other agricultural produce, other than machinery of heading 8437; parts thereof:				
	Mowers for lawns, parks or sports grounds:				
8433.11.00	Powered, with the cutting device rotating in a horizontal plane.....				4%
				Free (A,E,IL,J) 2% (CA)	30%
10	Electric mowers, including battery operated.....				No.
	Riding mowers, other than electric:				
20	Under 5.2 kW.....				No.
30	5.2 kW and over but under 7.46 kW.....				No.
40	7.46 kW and over.....				No.
	Other:				
50	Under 3.7 kW.....				No.
60	3.7 kW and over.....				No.
8433.19.00	Other.....				4%
				Free (A,E,IL,J) 2% (CA)	30%
10	Greens mowers.....				No.
20	Gang cutting units.....				No.
30	Other riding mowers.....				No.
	Other:				
40	Gasoline powered.....				No.
50	Other.....				No.
8433.20.00	Other mowers, including cutter bars for tractor mounting.....				Free
	Tractor drawn or for tractor mounting:				
20	Rotary cutter type.....				No.
40	Other.....				No.
60	Other.....				No.
8433.30.00	Other haymaking machinery.....				No.....
				Free	Free
8433.40.00	Straw or fodder balers, including pick-up balers.....				No.....
				Free	Free
	Other harvesting machinery; threshing machinery:				
8433.51.00	Combine harvester-threshers.....				Free
	Self-propelled.....				No.
10	Other.....				No.
8433.52.00	Other threshing machinery.....				No.....
				Free	Free
8433.53.00	Root or tuber harvesting machines.....				No.....
				Free	Free
8433.59.00	Other.....				Free
	Field forage harvesters.....				No.
10	Other.....				No.
8433.60.00	Machines for cleaning, sorting or grading eggs, fruit or other agricultural produce....				Free
	Machines for cleaning, sorting or grading eggs.....				No.
10	Other.....				No.
8433.90	Parts:				
8433.90.10	Of mowers for lawns, parks or sports grounds.....				X.....
				4%	Free (A,E,IL,J) 2% (CA)
8433.90.50	Other.....				Free
	Of other mowers, harvesting machines and threshing machines:				
20	Of haying machines and balers..				X
40	Other.....				X
60	Of machines for cleaning, sorting or grading eggs.....				X
80	Of machines for cleaning, sorting or grading fruit or other agricultural produce.....				X

8434		Milking machines and dairy machinery, and parts thereof:					
8434.10.00	00	Milking machines.....	No.....	Free		Free	
8434.20.00	00	Dairy machinery.....	No.....	Free		Free	
8434.90.00	00	Parts.....	X.....	Free		Free	
8435		Presses, crushers and similar machinery, used in the manufacture of wine, cider, fruit juices or similar beverages; parts thereof:					
8435.10.00	00	Machinery.....	No.....	4.2%	Free (A,CA,E,IL,J) 40%		
8435.90.00	00	Parts.....	X.....	4.2%	Free (A,CA,E,IL,J) 40%		
8436		Other agricultural, horticultural, forestry, poultry-keeping or bee-keeping machinery, including germination plant fitted with mechanical or thermal equipment; poultry incubators and brooders; parts thereof:					
8436.10.00	00	Machinery for preparing animal feeds.....	No.....	Free		Free	
		Poultry-keeping machinery; poultry incubators and brooders:					
8436.21.00	00	Poultry incubators and brooders.....	No.....	Free		Free	
8436.29.00	00	Other.....	No.....	Free		Free	
8436.80.00		Other machinery.....		Free		Free	
	20	Forestry machinery.....	No.				
		Other:					
	40	Barn and barnyard machines.....	No.				
	60	Machines for preparing crops for market or for use.....	No.				
		Other:					
	70	Bee-keeping machinery.....	No.				
	90	Other.....	No.				
8436.91.00		Parts:					
		Of poultry-keeping machinery or poultry incubators and brooders.....		Free		Free	
	40	Of poultry incubators and brooders..	X				
	80	Other.....	X				
8436.99.00		Other.....		Free		Free	
	20	Of forestry machinery.....	X				
	30	Of bee-keeping machinery.....	X				
	35	Of machinery for preparing animal feeds.....	X				
		Other:					
	40	Of barn or barnyard machines...	X				
	70	Of machines for preparing crops for market or for use.....	X				
	90	Other.....	X				

8437		Machines for cleaning, sorting or grading seed, grain or dried leguminous vegetables, and parts thereof; machinery used in the milling industry or for the working of cereals or dried leguminous vegetables, other than farm type machinery; parts thereof:							
8437.10.00	00	Machines for cleaning, sorting or grading seed, grain or dried leguminous vegetables....	No.....	3.5%	Free	(A,CA,E,IL,J)	35%		
8437.80.00		Other machinery.....		3.5%	Free	(A,CA,E,IL,J)	35%		
	10	Flour mill and grain mill machines.....	No.						
	90	Other.....	No.						
8437.90.00		Parts.....		3.5%	Free	(A,CA,E,IL,J)	35%		
	10	Of flour mill or grain mill machines.....	X						
	90	Other.....	X						
8438		Machinery, not specified or included elsewhere in this chapter, for the industrial preparation or manufacture of food or drink, other than machinery for the extraction or preparation of animal or fixed vegetable fats or oils; parts thereof:							
8438.10.00		Bakery machinery and machinery for the manufacture of macaroni, spaghetti or similar products.....		3.5%	Free	(A,CA,E,IL,J)	35%		
	10	Bakery machinery.....	No.						
	90	Other.....	No.						
8438.20.00	00	Machinery for the manufacture of confectionery, cocoa or chocolate.....	No.....	3.5%	Free	(A,CA,E,IL,J)	35%		
8438.30.00	00	Machinery for sugar manufacture.....	No.....	Free			Free		
8438.40.00	00	Brewery machinery.....	No.....	3.5%	Free	(A,CA,E,IL,J)	35%		
8438.50.00		Machinery for the preparation of meat or poultry.....		3.5%	Free	(A,CA,E,IL,J)	35%		
	10	Meat- and poultry-packing plant machinery.....	No.						
	90	Other.....	No.						
8438.60.00	00	Machinery for the preparation of fruits, nuts or vegetables.....	No.....	3.5%	Free	(A,CA,E,IL,J)	35%		
8438.80.00	00	Other machinery.....	No.....	4%	Free	(A,CA,E,IL,J)	40%		
8438.90		Parts:							
8438.90.10	00	Of machinery for sugar manufacture.....	X.....	Free			Free		
8438.90.90		Other.....		3.5%	Free	(A,CA,E,IL,J)	35%		
	15	Of bakery machinery and machinery for the manufacture of macaroni, spaghetti or similar products.....	X						
	30	Of machinery for the manufacture of confectionery, cocoa or chocolate.....	X						
	60	Of machinery for the preparation of meat or poultry.....	X						
	90	Other.....	X						

8439		Machinery for making pulp of fibrous cellulosic material or for making or finishing paper or paperboard (other than the machinery of heading 8419); parts thereof:					
8439.10.00		Machinery for making pulp of fibrous cellulosic material.....	Free			35%	
10		New.....	No.				
90		Used or rebuilt.....	No.				
8439.20.00		Machinery for making paper or paperboard.....	Free			35%	
10		New.....	No.				
90		Used or rebuilt.....	No.				
8439.30.00	00	Machinery for finishing paper or paperboard... Parts:	No..... 2%		Free (A,CA,E,IL,J)	35%	
8439.91		Of machinery for making pulp of fibrous cellulosic materials:					
8439.91.10	00	Bed plates, roll bars and other stock-treating parts.....	X..... 4.7%		Free (A,CA,E,IL,J)	20%	
8439.91.90	00	Other.....	X..... Free			35%	
8439.99		Other:					
8439.99.10	00	Of machinery for making paper or paperboard.....	X..... Free			35%	
8439.99.50	00	Of machinery for finishing paper or paperboard.....	X..... 3%		Free (A,CA,E,IL,J)	35%	
8440		Bookbinding machinery, including book-sewing machines, and parts thereof:					
8440.10.00	00	Machinery.....	No..... 3.7%		Free (A,CA,E,IL,J)	25%	
8440.90.00	00	Parts.....	X..... 3.7%		Free (A,CA,E,IL,J)	25%	
8441		Other machinery for making up paper pulp, paper or paperboard, including cutting machines of all kinds, and parts thereof:					
8441.10.00	00	Cutting machines.....	No..... 2%		Free (A,CA,E,IL,J)	35%	
8441.20.00	00	Machines for making bags, sacks or envelopes..	No..... 2%		Free (A,CA,E,IL,J)	35%	
8441.30.00	00	Machines for making cartons, boxes, cases, tubes, drums or similar containers, other than by molding.....	No..... 2%		Free (A,CA,E,IL,J)	35%	
8441.40.00	00	Machines for molding articles in paper pulp, paper or paperboard.....	No..... 2%		Free (A,CA,E,IL,J)	35%	
8441.80.00	00	Other machinery.....	No..... 2%		Free (A,CA,E,IL,J)	35%	
8441.90.00	00	Parts.....	X..... 3%		Free (A,CA,E,IL,J)	35%	



8442		Machinery, apparatus and equipment (other than the machine tools of headings 8456 to 8465), for type-founding or typesetting, for preparing or making printing blocks, plates, cylinders or other printing components; printing type, blocks, plates, cylinders and other printing components; blocks, plates, cylinders and lithographic stones, prepared for printing purposes (for example, planed, grained or polished); parts thereof:				
8442.10.00	00	Phototypesetting and composing machines.....	No.....	Free		Free
8442.20.00	00	Machinery, apparatus and equipment for typesetting or composing by other processes, with or without founding device....	No.....	Free		Free
8442.30.00	00	Other machinery, apparatus and equipment.....	No.....	Free		Free
8442.40.00	00	Parts of the foregoing machinery, apparatus or equipment.....	X.....	Free		Free
8442.50		Printing type, blocks, plates, cylinders and other printing components; blocks, plates, cylinders and lithographic stones, prepared for printing purposes (for example, planed, grained or polished):				
8442.50.10	10	Plates.....		Free		25%
		Planed, grained, polished or otherwise prepared for engraving or impressing.....	No.			
	90	Other.....	No.			
8442.50.90	10	Other.....		8%	Free (A,CA,E,IL,J)	60%
		Planed, grained, polished or otherwise prepared for engraving or impressing.....	No.			
	90	Other.....	No.			

8443		Printing machinery; machines for uses ancillary to printing; parts thereof:							
		Offset printing machinery:							
8443.11.00	00	Reel-fed.....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.12.00	00	Sheet-fed, office type (sheet size not exceeding 22 x 36 cm).....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.19		Other:							
8443.19.10	00	Weighing 900 kg or less.....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.19.50	00	Weighing more than 900 kg but less than 1,600 kg.....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.19.90	00	Weighing 1,600 kg or more.....	No.....	2.4%		Free	(A,CA,E,IL,J)	25%	
		Letterpress printing machinery, excluding flexographic printing:							
8443.21.00	00	Reel-fed.....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.29.00	00	Other.....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.30.00	00	Flexographic printing machinery.....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.40.00	00	Gravure printing machinery.....	No.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.50		Other printing machinery:							
8443.50.10	00	Textile printing machinery.....	X.....	5.1%		Free	(A,CA,E,IL,J)	40%	
8443.50.50	00	Other.....	X.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.60.00	00	Machines for uses ancillary to printing.....	X.....	3.3%		Free	(A,CA,E,IL,J)	25%	
8443.90		Parts:							
8443.90.10	00	Of textile printing machinery.....	X.....	5.1%		Free	(A,CA,E,IL,J)	40%	
8443.90.50	00	Other.....	X.....	3.3%		Free	(A,CA,E,IL,J)	25%	

8444.00.00		Machines for extruding, drawing, texturing or cutting man-made textile materials.....	4.5% <u>1/</u>	Free (A,CA,E,IL,J) 40%
	10	Texturing machines.....	No.	
	90	Other.....	No.	
8445		Machines for preparing textile fibers; spinning, doubling or twisting machines and other machinery for producing textile yarns; textile reeling or winding (including weft winding) machines and machines for preparing textile yarns for use on the machines of heading 8446 or 8447:		
		Machines for preparing textile fibers:		
8445.11.00	00	Carding machines.....	No..... 4.2% <u>2/</u>	Free (A,CA,E,IL,J) 40%
8445.12.00	00	Combing machines.....	No..... 4.2%	Free (A,CA,E,IL,J) 40%
8445.13.00	00	Drawing or roving machines.....	No..... 4.2%	Free (A,CA,E,IL,J) 40%
8445.19.00		Other.....	4.2%	Free (A,CA,E,IL,J) 40%
	40	Cotton gins.....	No.	
	80	Other.....	No.	
8445.20.00	00	Textile spinning machines.....	No..... 4.2% <u>2/</u>	Free (A,CA,E,IL,J) 40%
8445.30.00		Textile doubling or twisting machines.....	4.2%	Free (A,CA,E,IL,J) 40%
	10	Textile twisting machines.....	No.	
	90	Other.....	No.	
8445.40.00	00	Textile winding (including weft winding) or reeling machines.....	No..... 4.7%	Free (A,CA,E,IL,J) 40%
8445.90.00	00	Other.....	No..... 4.7%	Free (A,CA,E,IL,J) 40%
8446		Weaving machines (looms):		
8446.10.00		For weaving fabrics of a width not exceeding 30 cm.....	4.7% <u>3/</u>	Free (A,CA,E,IL,J) 40%
	10	Power looms.....	No.	
	90	Other.....	No.	
		For weaving fabrics of a width exceeding 30 cm, shuttle type:		
8446.21.00	00	Power looms.....	No..... 4.7%	Free (A,CA,E,IL,J) 40%
8446.29.00	00	Other.....	No..... 4.7%	Free (A,CA,E,IL,J) 40%
8446.30.00		For weaving fabrics of a width exceeding 30 cm, shuttleless type.....	4.7%	Free (A,CA,E,IL,J) 40%
	10	Rapier type.....	No.	
	30	Jet type.....	No.	
	90	Other.....	No.	

1/ See heading 9902.84.44.  
2/ See heading 9902.84.45.  
3/ See heading 9902.84.42.

8447		Knitting machines, stitch-bonding machines and machines for making gimped yarn, tulle, lace, embroidery, trimmings, braid or net and machines for tufting:					
		Circular knitting machines:					
8447.11		With cylinder diameter not exceeding 165 mm:					
8447.11.10	00	For knitting hosiery.....	No.....	4.4% <u>1</u> /	Free	(A,CA,E,IL,J)	40%
8447.11.90		Other.....		4.2%	Free	(A,CA,E,IL,J)	40%
	10	Open-top cylinder machines.....	No.				
	20	Cylinder and dial machines.....	No.				
	90	Other.....	No.				
8447.12		With cylinder diameter exceeding 165 mm:					
8447.12.10	00	For knitting hosiery.....	No.....	4.4% <u>1</u> /	Free	(A,CA,E,IL,J)	40%
8447.12.90		Other.....		4.2% <u>1</u> /	Free	(A,CA,E,IL,J)	40%
	10	Open-top cylinder machines.....	No.				
	20	Cylinder and dial machines.....	No.				
	90	Other.....	No.				
8447.20		Flat knitting machines; stitch-bonding machines:					
8447.20.10	00	V-bed flat knitting machines.....	No.....	5.1% <u>1</u> /	Free	(A,CA,E,IL,J)	40%
8447.20.40	00	Warp knitting machines.....	No.....	Free			40%
8447.20.60	00	Other.....	No.....	4.7% <u>1</u> /	Free	(A,CA,E,IL,J)	40%
8447.90		Other:					
8447.90.10	00	Braiding and lace-braiding machines.....	No.....	4.7% <u>2</u> /	Free	(A,CA,E,IL,J)	40%
8447.90.50	00	Embroidery machines.....	No.....	4.2%	Free	(A,CA,E,IL,J)	30%
8447.90.90	00	Other.....	No.....	4.4%	Free	(A,CA,E,IL,J)	40%

1/ See headings 9902.84.47, 9902.84.48 and 9902.84.49.  
2/ See heading 9902.84.50.

- 1/ See headings 9902.84.48, 9902.84.49 and 9902.84.50.
- 2/ See heading 9902.48.23.
- 3/ See heading 9902.84.51.
- 4/ See headings 9902.84.47, 9902.84.48, and 9902.84.49.
- 5/ See headings 9902.84.50.

8449.00		Machinery for the manufacture or finishing of felt or nonwovens in the piece or in shapes, including machinery for making felt hats; blocks for making hats; parts thereof:						
8449.00.10	00	Finishing machinery and parts thereof.....	X.....	5.1%	Free	(A,CA,E,IL,J)	40%	
8449.00.50	00	Other.....	X.....	4.4%	Free	(A,CA,E,IL,J)	40%	
8450		Household- or laundry-type washing machines, including machines which both wash and dry; parts thereof:						
		Machines, each of a dry linen capacity not exceeding 10 kg:						
8450.11.00		Fully automatic machines.....		2.8%	Free	(A,E,IL,J)	35%	
	10	Coin operated.....	No.		1.4%	(CA)		
		Other:						
	40	Top Loading.....	No.					
	80	Other.....	No.					
8450.12.00	00	Other machines with built-in centrifugal dryer.....	No.....	5.1%	Free	(A,E,IL,J)	40%	
8450.19.00	00	Other.....	No.....	2.8%	Free	(A,E,IL,J)	35%	
8450.20.00		Machines, each of a dry linen capacity exceeding 10 kg.....		2.8%	Free	(A,E,IL,J)	35%	
	10	Coin operated.....	No.		1.4%	(CA)		
	90	Other.....	No.					
8450.90.00	00	Parts.....	X.....	5.1%	Free	(A,E,IL,J)	40%	
					2.5%	(CA)	<u>1/</u>	
8451		Machinery (other than machines of heading 8450) for washing, cleaning, wringing, drying, ironing, pressing (including fusing presses), bleaching, dyeing, dressing, finishing, coating or impregnating textile yarns, fabrics or made up textile articles and machines for applying the paste to the base fabric or other support used in the manufacture of floor coverings such as linoleum; machines for reeling, unreeling, folding, cutting or pinking textile fabrics; parts thereof:						
8451.10.00	00	Dry-cleaning machines.....	No.....	3.9%	Free	(A,CA,E,IL,J)	35%	
8451.21.00		Drying machines:						
		Each of a dry linen capacity not exceeding 10 kg.....		5.1%	Free	(A,E,IL,J)	40%	
	10	Coin operated.....	No.		2.5%	(CA)		
	90	Other.....	No.					
8451.29.00		Other.....		5.1%	Free	(A,E,IL,J)	40%	
	10	For drying made up articles.....	No.		2.5%	(CA)		
	90	Other.....	No.					
8451.30.00	00	Ironing machines and presses (including fusing presses).....	No.....	3.9%	Free	(A,CA,E,IL,J)	35%	
8451.40.00	00	Washing, bleaching or dyeing machines.....	No.....	5.1%	Free	(A,CA,E,IL,J)	40%	
8451.50.00	00	Machines for reeling, unreeling, folding, cutting or pinking textile fabrics.....	No.....	4.4%	Free	(A,CA,E,IL,J)	40%	
8451.80.00	00	Other machinery.....	No.....	5.1%	Free	(A,CA,E,IL,J)	40%	
8451.90.00		Parts.....		5.1%	Free	(A,CA,E,IL,J)	40%	
	10	Of machines for washing, dry-cleaning, ironing, pressing or drying made up textile articles or of other household or laundry type machines.....	X					
		Other:						
	20	Of machines for bleaching, dyeing, washing or cleaning.....	X					
	90	Other.....	X					

1/ See subheading 9905.84.31.

8452		Sewing machines, other than book-sewing machines of heading 8440; furniture, bases and covers specially designed for sewing machines; sewing machine needles; parts thereof:						
8452.10.00		Sewing machines of the household type.....	No.	3.7%	Free	(A,CA,E,IL,J)	30%	
	10	Valued not over \$20 each.....	No.					
	90	Other.....	No.					
8452.21		Other sewing machines:						
		Automatic units:						
8452.21.10	00	Specially designed to join footwear soles to uppers.....	No.....	Free				Free
8452.21.90	00	Other.....	No.....	2.5%	Free	(A,CA,E,IL,J)	30%	
8452.29		Other:						
8452.29.10	00	Specially designed to join footwear soles to uppers.....	No.....	Free				Free
8452.29.90	00	Other.....	No.....	2.5%	Free	(A,CA,E,IL,J)	30%	
8452.30.00	00	Sewing machine needles.....	thousand	6%	Free	(A,CA,E,IL,J)	42%	
8452.40.00	00	Furniture, bases and covers for sewing machines, and parts thereof.....	X.....	2.5%	Free	(A,CA,E,IL,J)	20%	
8452.90.00		Other parts of sewing machines.....		2.5%	Free	(A,CA,E,IL,J)	30%	
	10	Of household machines.....	X					
	90	Other.....	X					
8453		Machinery for preparing, tanning or working hides, skins or leather or for making or repairing footwear or other articles of hides, skins or leather, other than sewing machines; parts thereof:						
8453.10.00	00	Machinery for preparing, tanning or working hides, skins or leather.....	No.....	3.7%	Free	(A,CA,E,IL,J)	35%	
8453.20.00	00	Machinery for making or repairing footwear....	No.....	Free				Free
8453.80.00	00	Other machinery.....	No.....	3.7%	Free	(A,CA,E,IL,J)	35%	
8453.90		Parts:						
8453.90.10	00	Of machinery for making or repairing footwear.....	X.....	Free				Free
8453.90.50	00	Other.....	X.....	3.7%	Free	(A,CA,E,IL,J)	35%	